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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/763,741	01/23/2004	Karthik Ramani	1165.021US1	7671
21186 7590 01/22/2009 SCHWEGMAN, LUNDBERG & WOESSNER, P.A. P.O. BOX 2938 MINNEAPOLIS, MN 55402			EXAMINER CHAU, DUNG K	
			ART UNIT 2169	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/763,741	<b>Applicant(s)</b> RAMANI ET AL.	
	<b>Examiner</b> DUNG K. CHAU	<b>Art Unit</b> 2169	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 75-81 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 75-81 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Amendment*

1. This Office Action is in response to applicant's communication filed November 03, 2008 in response to PTO Office Action mailed August 01, 2008. The Applicant's remarks and amendments to the claims and/or the specification were considered with the results that follow.
2. In response to the last Office Action, claims 75-81 have been newly added. As a result, claims 1-13 and 75-81 are pending in this application.

### **Claim Rejections - 35 USC § 102**

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1-2, 4-7 and 76-77** are rejected under 35 U.S.C. § 102(b) as being anticipated by Gever et al. Patent. No. US 6,329,994.

As per **claim 1**, Gever et al. teach a method for searching, comprising:

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receiving a three dimensional object (col. 11, lines 16-26; col. 26, lines 31 – 38);

searching one or more data stores with the three dimensional object as a first search query (col. 11 lines 16-25; col. 26, lines 31 – 38);

presenting results from the search, wherein the results include an answer set (col. 12 line 62 – col. 13 line 10);

dynamically receiving modifications for one or more items in the answer set (col. 11 lines 16-25; col. 27 line 61 – col. 28 line 9); and

re-searching the one or more data stores with the modifications associated with the one or more items as a second search query (col. 11 lines 16-25; col. 27 line 61 – col. 28 line 9).

As per **claim 2**, Gever et al. teach the method of claim 1 further comprising, converting the three dimensional object into a graph skeleton defining a graph data structure, wherein the graph data structure is the first search query (Fig. 4; col. 7 line 59 – col. 8 line 10; col. 9 line 53 – col. 10 line 5; col. 16 lines 46-55; col. 19 line 62 – col. 20 line 21).

As per **claim 4**, Gever et al. teach wherein the receiving the three dimensional object further includes presenting a list of three dimensional models and permitting the three dimensional object to be formed from selective ones of the list of three dimensional models (col. 1 lines 29-36; col. 23 lines 11-20).

As per **claim 5**, Gever et al. further teach wherein the presenting the results further include grouping selective portions of the one or more items in the answer set into related clusters (col. 26 line 64 - col. 27 line 8).

As per **claim 6**, Gever et al. further teach the method of claim 1 further comprising, receiving one or more filters which constrain the first or second search queries (col. 8, lines 5-23; col. 26, lines 28-50).

As per **claim 7**, Gever et al. further teach wherein the re-searching further includes identifying in the modifications for the one or more items information that identifies selective ones of the items that are more relevant to the first search query than selective other ones of the items (col. 27 line 46 - col. 28 line 9).

As per **claim 76**, Gever et al. further teach wherein one said filter comprises a total volume filter (col. 8, lines 5-23; col. 26, lines 28-50).

As per **claim 77**, it has similar limitations as claim 1; therefore it is rejected under the same rationale.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claim 3** is rejected under 35 U.S.C. § 103 (a) as being unpatentable over Gever et al. Patent No. US 6,329,994 in view of Igarashi et al. Patent No. US 6,549,201.

As per **claim 3**, Gever et al. teach wherein receiving the three dimensional object (col. 11, lines 16-26; col. 27 line 46 – col. 28 line 3);

However, Gever et al. do not explicitly teach further includes interactively permitting the three dimensional object to be sketched.

Igarashi et al. teach a sketching interface for quickly and easily designing freeform models such as stuffed animals and other rotund objects. The user draws several 2D freeform strokes interactively on the screen and the system automatically constructs plausible 3D polygonal surfaces (Abstract; col. 1, lines 35-66).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Gever et al. and Igarashi et al. to provide a sketching interface for a 3D freeform design, because it would allow user to sketch searchable object.

7. **Claims 8-13** are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Gever et al. Patent No. US 6,329,994 in view of Shoov et al. Pub. No. US 2003/0071810.

As per **claim 8**, Gever et al. teach a method of searching, comprising:  
searching one or more data stores with the three dimensional representation as a first search query (col. 11 lines 16-25); and  
presenting one or more items in an answer set that is responsive to the first search query of the one or more data stores (col. 11 lines 16-25);

However, Gever et al. do not teach

- a) receiving a two dimensional object ;
- b) mapping the two dimensional object to a three dimensional representation.

Shoov et al. teach

- a) receiving a two dimensional object as the functions can include the ability to import two-dimensional representations of a three-dimensional object (abstract);
- b) mapping the two dimensional object to a three dimensional representation as the 2D drawing 303 consists of four 2D views 304-310. Mapping each view into 3D space may occur immediately after each view is selected and the orientation is indicated (page 2, paragraphs [0012, 0013, and 0028]; page 5, paragraphs [0052-0053]).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Gever et al. and Shoov et al. to map 2D views to 3D representation, because it would reduce or simplifying the steps needed to convert between 2D and 3D representations of an object.

As per **claim 9**, Gever et al. further teach wherein the mapping further includes:

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representing the three dimensional skeleton as a three dimensional graph structure, wherein the three dimensional graph structure is used as the first search query (Fig. 4; col. 7 line 59 – col. 8 line 10; col. 9 line 53 – col. 10 line 5; col. 16 lines 46-55; col. 19 line 62 – col. 20 line 21).

However, Gever et al. do not explicitly teach representing the two dimensional object as a two dimensional skeleton as 2D representation of a model; and converting the two dimensional skeleton into a three dimensional skeleton.

Shoov et al. teach representing the two dimensional object as a two dimensional skeleton as 2D representation of a model (page 2, paragraph [0027]);

converting the two dimensional skeleton into a three dimensional skeleton as converting between 2D and 3D representations of a modeled object (page 2, paragraph [0027]; page 4, paragraphs [0044-0045]; and

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Gever et al. and Shoov et al. to convert two dimensional views of an object into a three dimensional model, because it would simplify the steps needed to convert between 2D and 3D representations of an object.

As per **claim 10**, Gever et al. further teach the method of claim 8 further comprising:

receiving relevance indications for a selective number of the one or more items in the answer set (col. 11 lines 16-25; col. 27 line 61 – col. 28 line 9); and



searching the one or more data stores with the selective number of the one or more items and the relevance indications as a second search query (col. 11 lines 16-25; col. 27 line 61 – col. 28 line 9).

As per **claim 11**, Gever et al. further teach retaining the relevance indications as preferences for subsequent search queries received and processed, where the retained relevance indications are used as filters to subsequent first queries (col. 8, lines 5-23; col. 26, lines 28-50; col. 27 line 46 - col. 28 line 9).

As per **claim 12**, Gever et al. further teach the method of claim 8 further comprising organizing the answer set as a plurality of related clusters, wherein each related cluster includes a selective number of the one or more items (col. 26 line 64 - col. 27 line 8).

As per **claim 13**, Shoov et al. further teach wherein the mapping further includes: converting the two dimensional object into a two dimensional skeleton; generating candidate three dimensional vertices for each of two dimensions of the two dimensional skeleton; generating candidate three dimensional edges from the candidate three dimensional vertices; creating candidate three dimensional faces from the three dimensional edges on a same surface; creating one or more three dimensional objects from the candidate three dimensional faces; and associating the one or more three dimensional objects with the received two dimensional object as the three dimensional

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skeleton (page 3, paragraphs [0030-0038]; page 4, paragraph [0045]; page 6, paragraph [0059]; page 7, paragraph [0072]; page 8, paragraph [0075]).

8. **Claim 75** are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Gever et al. Patent No. US 6,329,994 in view of Miyao et al. Patent. No. US 6,466,237.

As per **claim 75**, Gever et al. teach the invention substantially as claimed as discussed above; however, Gever et al. do not explicitly teach the method of claim 5 further comprising, selecting a cluster to allow further browsing within that selected cluster.

Miyao et al. teach selecting a cluster to allow further browsing within that selected cluster as selection of a cluster of file bundles from a plurality of clusters (col. 6 lines 56-59).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Gever et al. and Miyao et al. to select a cluster of items for browsing, because it would allow user to browse related items more quickly.

9. **Claims 78-81** are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Gever et al. Patent No. US 6,329,994 in view of Friedman Patent. No. US 5,760,778.

As per **claim 78**, Gever et al. further teach wherein searching further includes:

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using matcher to determine whether graphs in the one or more data stores satisfy criteria (col. 8 lines 5-34; col. 11 lines 16-25; col. 26, lines 31 – 38); and

using matcher to evaluate similarity between the skeletal graph and the graphs in the one or more data stores that satisfy the criteria (col. 8 lines 5-34; col. 11 lines 16-25; col. 26, lines 31 – 38).

However, Gever et al. do not explicitly teach high-level graph and low-level graph.

Friedman teaches a high-level graph as curvature estimation and straight lines (col. 1 lines 27-38; col. 3 lines 23-28); and a low-level graph as volumetric, volume primitives (col. 1 lines 27-38; col. 1 line 65—col2 line 9).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Gever et al. and Friedman to use curvature information, straight line and volume primitives as searching criteria, because it would enables user to find suitable images more efficiently and quickly.

As per **claim 79**, Friedman teaches wherein the criteria include topology criteria and geometric properties (Fig. 4; col. 1 lines 27-38; col. 3 lines 23-28).

As per **claim 80**, Friedman teaches wherein the geometric properties comprise at least one of:

edge type; curvature information for surface loops; a parametric equation of a curve; local volume of features that converge; local moments of the features that converge; and local distances from a surface (col. 1 lines 27-38; col. 3 lines 23-28).

As per **claim 81**, it has similar limitations as claim 78; therefore it is rejected under the same rationale.

### ***Response to Arguments***

10. Applicant's arguments filed 11/03/2008 have been fully considered but they are not persuasive.

11. In the remarks, applicant argued in substance that

**(A)** Prior art does not teach "a three dimensional object or three dimensional representation is used a search query for a search."

As to point **(A)**, Gever et al. teach the limitation "a three dimensional object or three dimensional representation is used a search query for a search" as the search engine is preferably used to search through a library of animations and/or animated objects, most preferably, 3D Smart Objects (col. 26 lines 28-41). Therefore, Gever et al. read on the limitation as claimed.

**(B)** Prior art does not teach "converting the three dimensional object into a graph skeleton."

As to point **(B)**, Gever et al. teach the limitation “converting the three dimensional object into a graph skeleton” as Smart Object 70 comprises a skeleton, including surfaces 76, a hierarchy of organs 78 and behaviors 74. Organs 78 are made up of sub-organs 90, which are in turn made up of 3-D objects 86, comprising 3D geometrical shapes connected by joints, as are known in the art. Smart Objects derived from the same skeleton, whether at the level of individual objects and animations or at the levels of organs 78 or groups of animations 80, 82 and 84 (col. 16 lines 4-59).

**(C)** Prior art does not teach “allow individual features of a three dimensional object to be selected when assembling the three dimensional object.”

As to point **(C)**, in response to Applicant’s argument that the references fail to show certain feature of Applicant’s invention, it is noted that the features upon which Applicant relies (i.e. “... individual features of a three dimensional object to be selected when assembling the three dimensional object” page 7 in Applicant’s Remarks) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

### ***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP §

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706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung K. Chau whose telephone number is 571-270-1754. The examiner can normally be reached on Mon - Friday 7:30am - 5:00pm Est, Alt Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tony Mahmoudi can be reached on 571-272-4078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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January 20, 2009